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ABSTRACT

This book of posttests is designed to accompany the Engine Tune-Up Service Student Guide for Unit 5, Fuel and Carburetion Systems; available separately as CE 031 217. Focus of the posttests is the inspecting and servicing of the fuel and carburetion systems. One multiple choice posttest is provided that covers the 10 performance objectives contained in the unit. (No answer keys are provided.) (YLB)

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ENGINE TUNE-UP SERVICE

Unit 5: Fuel and Carburetion Systems

Posttests

Automotive Mechanics Curriculum

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CE 031 219

State of Florida
DEPARTMENT OF EDUCATION
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POSTTEST
Unit 5

Directions: Read the first question carefully. After selecting your answer, record the answer on your answer sheet in the space provided.

Next, turn to the question listed in parentheses at the end of your answer. For example, if your choice says, ***go to #14,*** you would answer question 14 next.

Each time you answer a question, be sure to record on your answer sheet **both** the question number and the letter of your answer. Continue working through the test until you reach the end.

You will be jumping from question to question, and will not have to answer more than 30 questions.

DO NOT MARK ON THIS TEST.

Situation: You have just been hired as a mechanic at Miller's Auto Repair, an independent garage. For your first job, Mr. Miller has given you a 1975 Ford LTD with a 460-cubic-inch V-8 engine equipped with electronic ignition. The owner of the vehicle has complained of poor acceleration, poor gas mileage, and frequent stalling.

1. What should you do first?

a. Visually inspect the engine compartment (go to #50)
b. Perform a fuel pump volume test (go to #59)
c. Crank the engine to hear how it runs (go to #27)
d. Hook up an engine analyzer (go to #56)
e. Perform a spark intensity test at the coil (go to #13)
f. Replace the ignition points and condenser (go to #34)
g. Replace the spark plugs (go to #31)
h. Perform a cylinder compression test (go to #70)

2. Float level specifications are as follows:

FLOAT LEVEL:	Primary valve	31/32 inches
	Auxiliary valve	1/32 inches

These figures mean that:

a. The float drop should be 31/32 inches, and the float level should be 1/32 inches (go to #55)
b. Only the float level on this carburetor is checked (go to #109)
c. The float level is checked only once, at either valve (go to #109)

3. This automobile is equipped with a catalytic converter. What special precautions should you take when performing the compression test?

a. The exhaust header pipes should be disconnected from the exhaust manifolds (go to #16)
b. The fuel inlet line should be removed from the carburetor (go to #41)
c. The engine should not be cranked for more than 30 seconds for all 8 cylinders (go to #16)
d. No special precautions are required (go to #16)
e. The battery ground cable clamp should be removed (go to #55)

4. Can this condition be corrected without tearing down the engine?

a. Yes (go to #55)
b. No (go to #19)

5. Specified secondary resistance is 7,000-13,000 ohms. Measured coil secondary resistance is 9,000 ohms. Now you should:

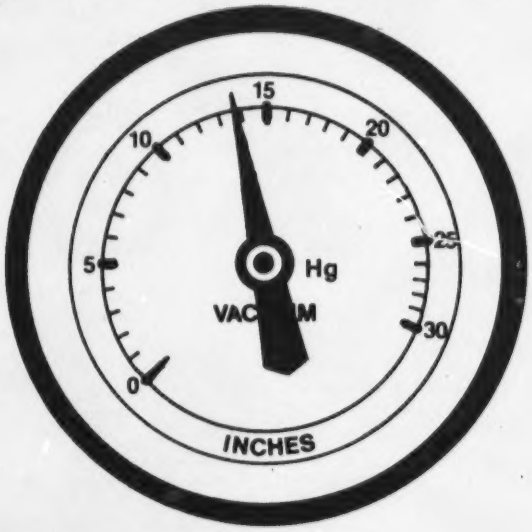
a. Road-test the vehicle (go to #120)
b. Replace the secondary wiring (go to #55)
c. Replace the coil (go to #100)
d. Recheck engine performance using the engine analyzer (go to #120)

6. After servicing the carburetor air cleaner, you should:

a. Hook up an engine analyzer to the engine (go to #56)
b. Crank the engine to hear how it runs (go to #27)
c. Perform a cylinder compression test (go to #70)
d. Replace the spark plugs (go to #31)

7. What else should you check?
   a. The spark intensity at the coil (go to #63)
   b. The spark plugs (go to #31)
   c. The overall engine performance (go to #56)
   d. The cylinder compression (go to #70)
   e. The ignition condenser (go to #55)

8. The fuel pump vacuum test, with a vacuum gauge hooked up at the fuel pump inlet, results in the following steady reading:



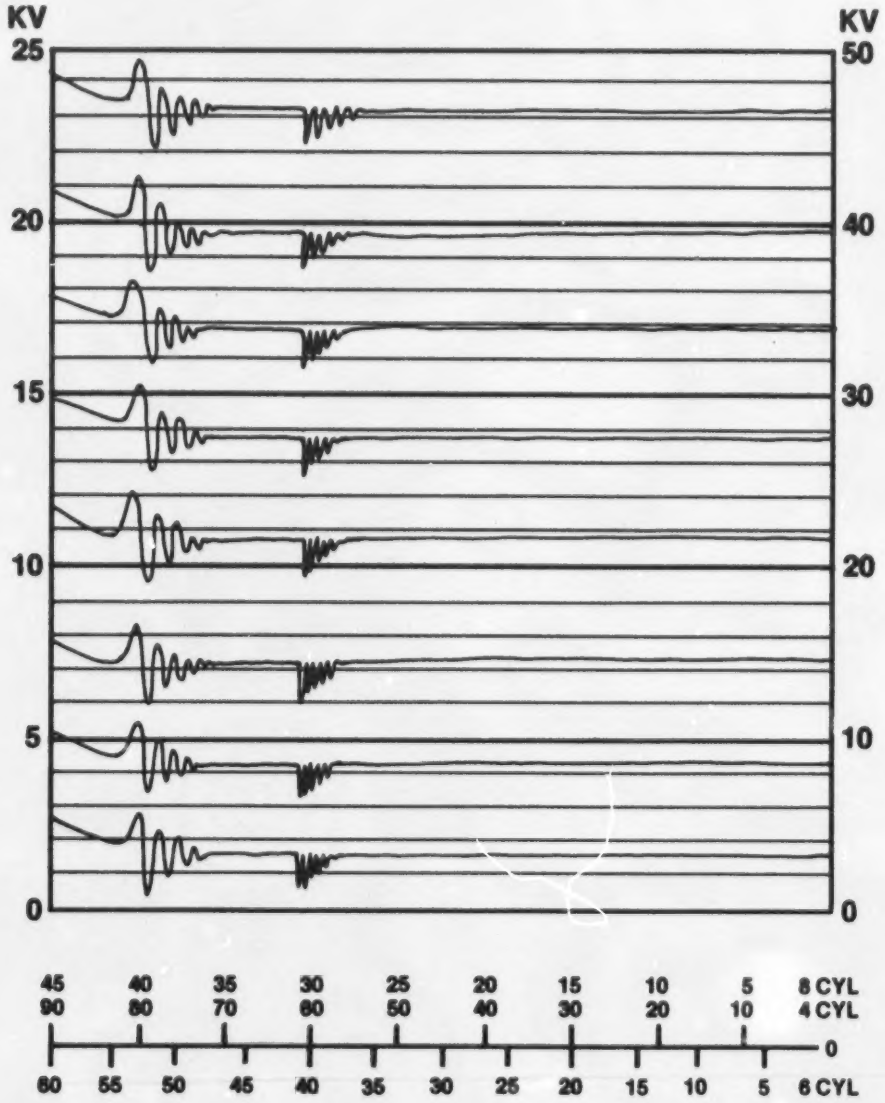
   You should now:
   a. Replace the flexible fuel line to the fuel pump (go to #33)
   b. Test the entire fuel line from the fuel tank to the fuel pump (go to #69)
   c. Visually inspect the fuel line (go to #30)
   d. Replace the fuel pump (go to #75)

9. The fuel pump volume test results were satisfactory. This means you should:
   a. Replace the fuel pump (go to #19)
   b. Adjust the carburetor idle speed and mixture to specifications (go to #19)
   c. Check for leaks in the fuel line (go to #19)
   d. Replace the fuel filter (go to #19)
   e. Perform a fuel pump pressure test (go to #19)

10. After making any necessary adjustments to the idle mixture, you should adjust the:
   a. Dashpot setting (go to #72)
   b. Cold (fast) idle RPM (go to #72)
   c. Hot (slow) idle RPM (go to #72)

11. The engine starts and then stalls. It starts and stalls again. Now it will not start at all. You should:
   a. Adjust the carburetor idle speed and mixture (go to #86)
   b. Perform a cylinder compression test (go to #55)
   c. Overhaul the carburetor (go to #19)
   d. Replace the fuel inlet filter cartridge (go to #53)
   e. Tell Mr. Miller that you cannot determine the problem (go to #120)

12. The secondary raster pattern looks like this:



Based on this pattern, you should:

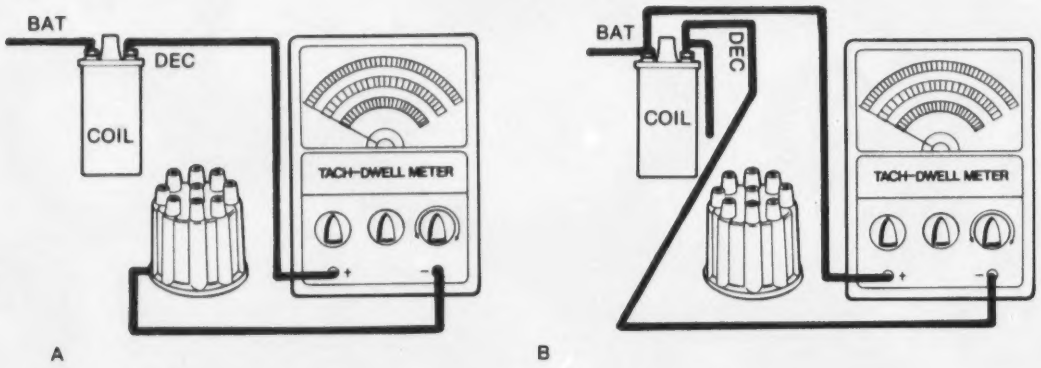
a. Replace the coil (go to #73)
b. Check the coil primary resistance (go to #77)
c. Check the coil secondary resistance (go to #5)
d. Adjust the contact point dwell (go to #120)

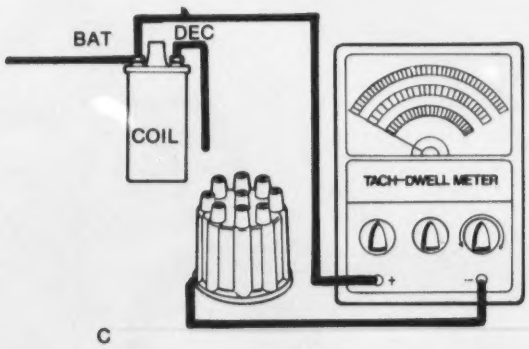
13. To perform a spark intensity test at the coil, you should:

a. Disconnect the battery ground cable clamp (go to #39)
b. Remove the spark plugs (go to #39)
c. Hook up a remote starter switch (go to #39)
d. Install the carburetor air cleaner assembly (go to #39)

14. To accurately set the carburetor idle speed and mixture, you must hook up a tachometer to the engine. Which hookup below should you use?

a. A (go to #96)
b. B (go to #83)
c. C (go to #19)





15. The preignition condition can be verified by:

a. Testing the cylinder compression (go to #4)
b. Testing the cylinder power balance (go to #4)
c. Checking the engine performance, using an engine analyzer (go to #4)
d. Checking recent gas mileage (go to #4)
e. Test-driving the vehicle (go to #4)

16. The manufacturer specifies 25 percent as the maximum variation between the highest and lowest cylinder readings.

Here are the readings:

CYL. NO.	1	2	3	4	5	6	7	8
COMPRESSION	125	140	150	140	135	140	140	140

These results indicate that:

a. The engine has a blown headgasket (go to #97)
b. The engine needs valve work (go to #97)
c. The piston rings are worn (go to #97)
d. You should perform a wet compression test (go to #49)
e. The engine compression is okay (go to #113)

17. The fuel line test shows no vacuum leaks. Now you should:

a. Overhaul the carburetor (go to #108)
b. Perform a cylinder compression test (go to #70)
c. Replace the fuel pump (go to #19)
d. Crank the engine to hear how it runs (go to #111)
e. Perform a spark intensity test at the coil (go to #63)

18. Specifications for this particular engine include this information:

Fuel Pump

Fuel pump tests are to be made at idle RPM when engine is at normal operating temperature. Transmission is to be set in neutral.

Pressure (at idle RPM) ..... 5.7-7.7 psi
Volume (at idle RPM) ..... 1 pt. in 20 seconds

Idle Speed	Idle Solenoid Energized	Idle Solenoid De-energized	Fast Idle
Manual transmission	650	600	1,350
Automatic transmission	650	600	1,350

If the fuel pump is good, it should pump:

a. One pint of fuel, with the engine at 1,350 RPM, in 20 seconds (go to #88)
b. One quart of fuel, with the engine at 1,350 RPM, in 20 seconds (go to #88)
c. One pint of fuel, with the engine at 5.7-7.7 psi, in 20 seconds (go to #88)
d. One pint of fuel, with the engine at 650 RPM, in 20 seconds (go to #88)

19. What condition might cause most or all of the symptoms described in Question 1?

a. The carburetor idle speed and mixture are set incorrectly (go to #41)
b. The manifold heat control valve is faulty (go to #41)
c. The carburetor choke is frozen open (go to #41)
d. The carburetor inlet fuel filter is in backwards (go to #41)

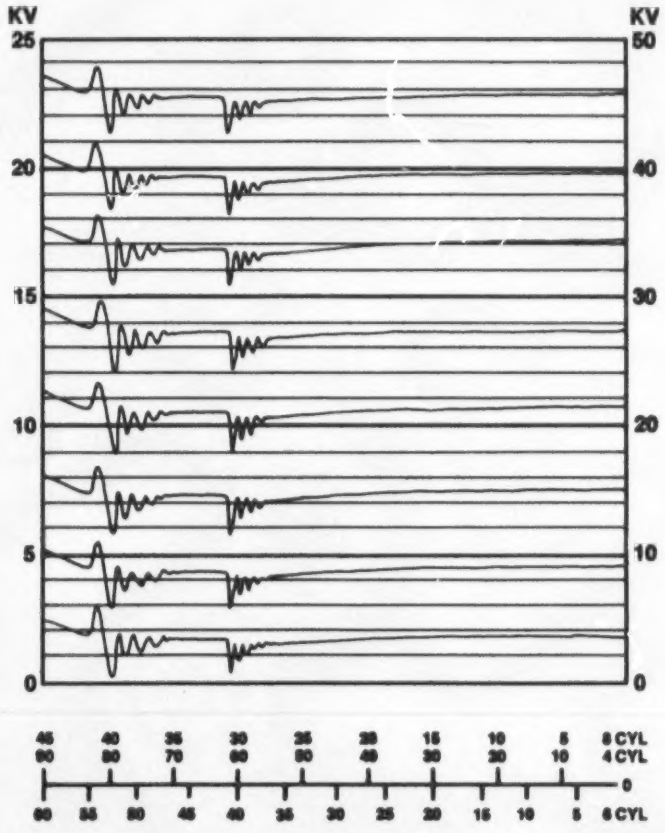
20. After making any necessary adjustments to the idle mixture, you should adjust the:

a. Dashpot setting (go to #32)
b. Cold (fast) idle RPM (go to #32)
c. Hot (slow) idle RPM (go to #32)

21. You should now:

a. Adjust the contact point dwell (go to #55)
b. Road-test the vehicle (go to #81)
c. Tell Mr. Miller that you have fixed the car (go to #120)
d. Check the coil oscillations by using a raster pattern (go to #12)
e. Check for distributor cap leakage and rotor voltage leakage (go to #35)

22. This is the oscilloscope pattern you obtain:



Based on this pattern, you should:

a. Replace the spark plugs (go to #55)
b. Crank the engine to hear how it runs (go to #92)
c. Check the engine timing (go to #29)
d. Perform a fuel pump volume test (go to #59)

23. The float level is checked with the carburetor parts:

a. Upside down (go to #101)
b. Right side up (go to #101)

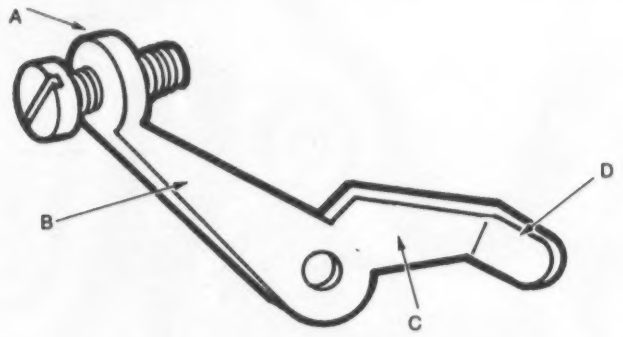
24. To perform the fuel pump pressure test, your hookup from the fuel pump volume test should be:

a. Changed (go to #57)
b. Left as it is (go to #57)

25. The technical service manual gives these directions for adjusting the choke unloader:

> **Hold throttle valve in wide-open position. Rotate the choke valve toward closed position until pawl on fast idle lever contacts fast idle cam. Use gauge or drill of specified size to check clearance between lower edge of choke valve and air horn wall. If this clearance is not correct, adjust by bending pawl on fast idle speed lever forward or backward as required.**

What part of the fast idle lever (shown below) should be adjusted in order to correctly set the choke unloader?



a. A (go to #44)
b. B (go to #44)
c. C (go to #44)
d. D (go to #44)

26. What kind of replacement spark plugs would you select?

a. "Hotter" spark plugs (go to #98)
b. "Colder" spark plugs (go to #98)

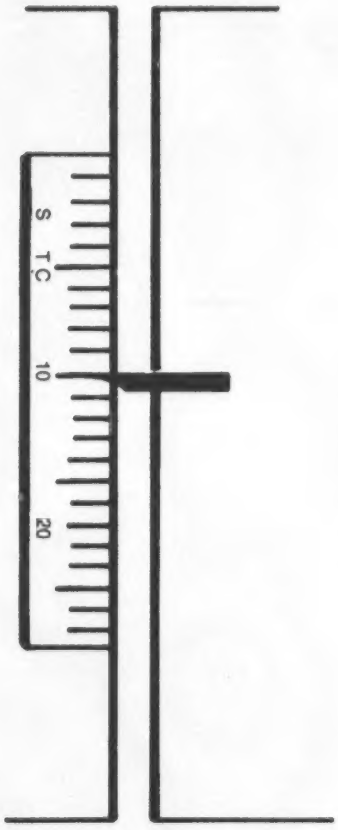
27. The engine starts and then stalls after a few moments. This happens several times. The engine runs when you hold the throttle down, but it stalls at idle. You should:

a. Overhaul the carburetor (go to #108)
b. Perform a spark intensity test at the coil (go to #63)
c. Hook up an engine analyzer (go to #56)
d. Check the carburetor float setting (go to #2)
e. Check the spark plugs (go to #31)
f. Replace the ignition points and condenser (go to #34)
g. Adjust the idle speed considerably higher (go to #43)

28. After removing the choke assembly from the carburetor, you should clean the parts with:

a. Carburetor cleaning solvent (go to #104)
b. Manifold heat control lubricant (go to #104)
c. Choke cleaning solvent (go to #104)
d. Silicone spray (go to #104)

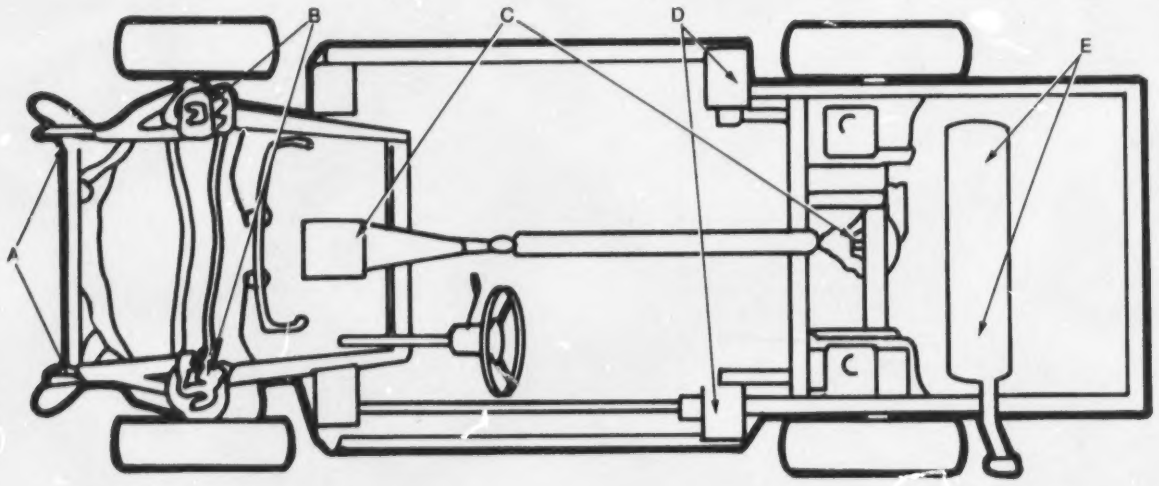
29. The engine timing specifications are listed as 10 degrees BTDC. You note the following while checking the timing:



Based on this reading, you should:

a. Adjust the distributor body in a clockwise direction (go to #55)
b. Adjust the distributor body in a counterclockwise direction (go to #19)
c. Adjust the contact point dwell to specifications (go to #34)
d. Proceed with the fuel pump volume test (go to #110)

30. In order to visually inspect the fuel lines, the vehicle must be raised. The shop only has a floor jack and jack stands. At what points should the jack stands be placed to support the vehicle?



a. A points (go to #83)
b. B points (go to #54)
c. C points (go to #19)
d. D points (go to #54)
e. E points (go to #55)

31. Before removing the spark plugs from the engine, you should:

a. Remove the carburetor air cleaner assembly (go to #67)
b. Replace the spark plug wires (go to #55)
c. Blow around the spark plugs with compressed air (go to #67)
d. Remove the manifold heat control valve (go to #67)

32. After adjusting the carburetor idle speed and mixture, you should:

a. Tell Mr. Miller that you have fixed the car (go to #120)
b. Crank the engine to hear how it runs (go to #105)
c. Perform the fuel pump volume test (go to #55)
d. Replace the spark plugs (go to #19)
e. Check the cylinder compression (go to #83)

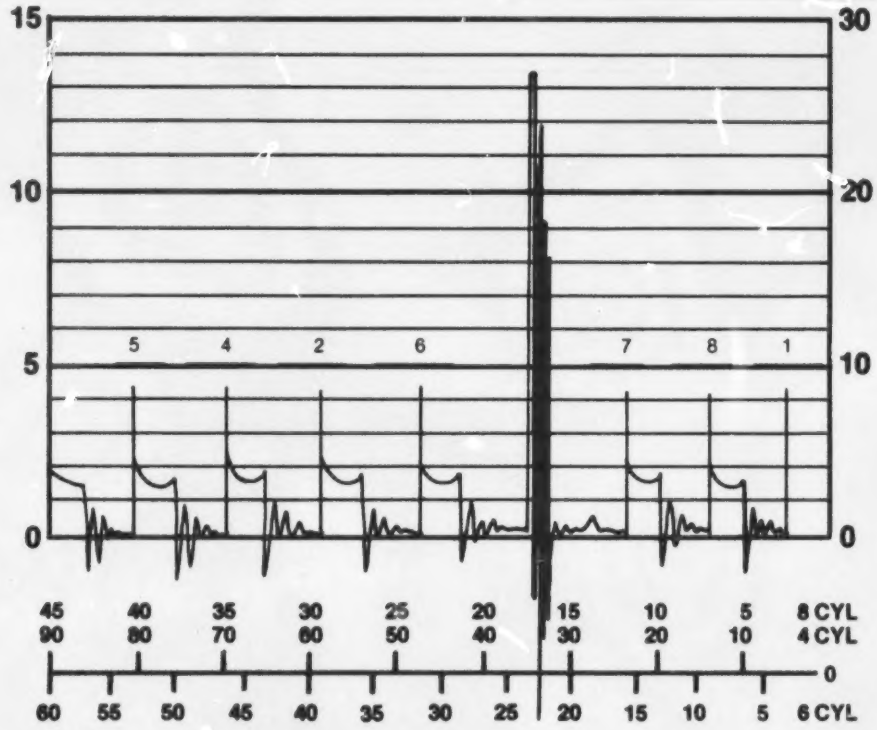
33. After replacing the flexible fuel line, you should:

a. Replace the fuel pump (go to #75)
b. Visually inspect the fuel line (go to #30)
c. Test the entire fuel line from the fuel tank to the fuel pump (go to #69)
d. Overhaul the carburetor (go to #108)
e. Crank the engine to hear how it runs (go to #111)

34. What should you use to remove the spring-clip distributor cap?

a. A screwdriver (go to #74)
b. Your fingers (go to #74)
c. An allen wrench (go to #55)

35. The firing voltage line for the removed spark plug wire looks like this:



Based on this pattern, you should:

a. Replace the distributor cap and rotor (go to #60)
b. Replace the secondary wiring (go to #55)
c. Road-test the vehicle (go to #81)
d. Tell Mr. Miller that you have fixed the car (go to #120)

36. If the fuel pump volume test results and the fuel pump pressure test results are good, then the trouble with the vehicle is most likely in the:

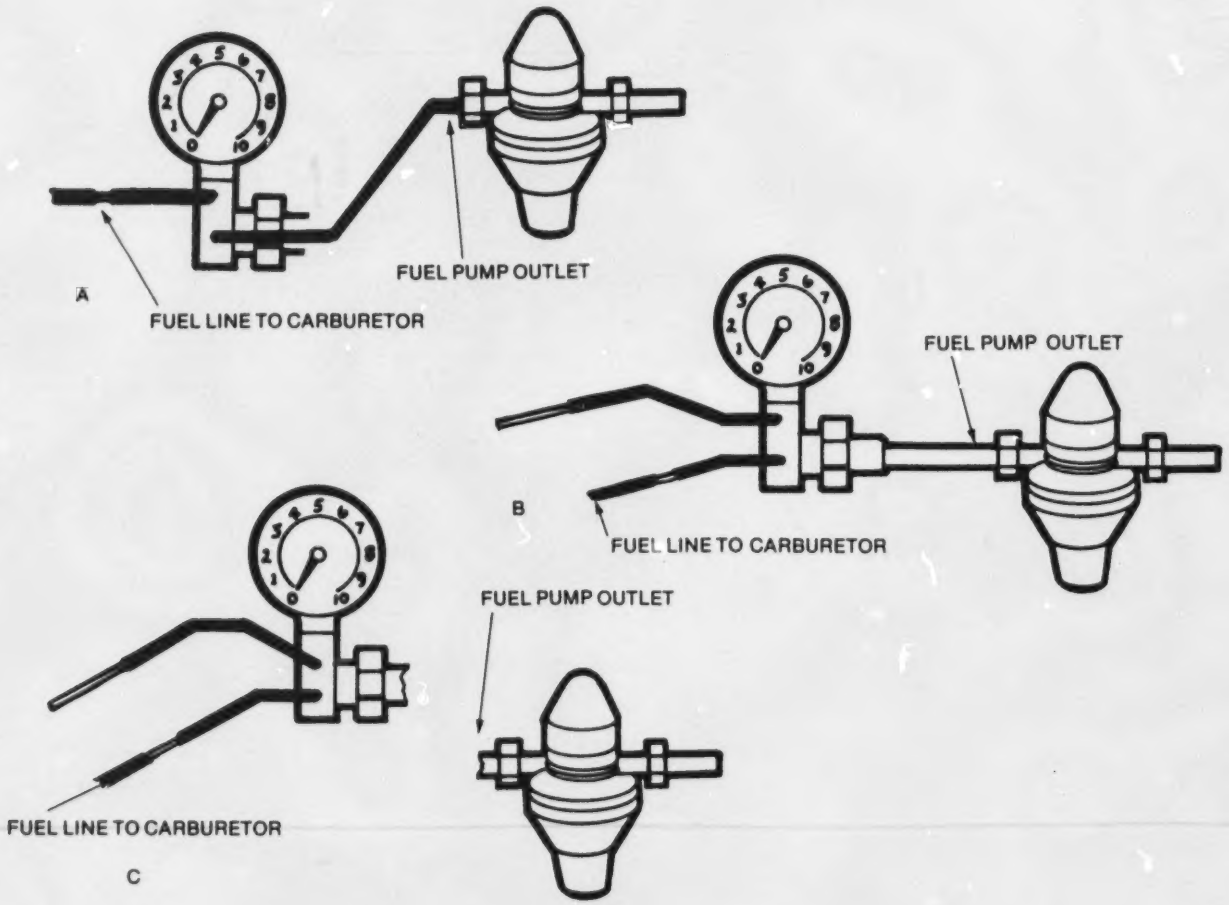
a. Primary ignition circuit (go to #83)
b. Secondary ignition circuit (go to #83)
c. Fuel system (go to #83)
d. Charging system (go to #83)
e. Cranking circuit (go to #83)

37. The technical service manual lists these headings under carburetor adjustment: hot (slow) idle RPM; dashpot adjustment; idle mixture; cold (fast) idle RPM.

You should first set the:

a. Cold (fast) idle RPM (go to #10)
b. Idle mixture (go to #10)
c. Dashpot adjustment (go to #10)
d. Hot (slow) idle RPM (go to #10)

38. Which of these hookups should be used for the fuel pump volume test?



a. A (go to #9)
b. B (go to #18)
c. C (go to #55)

39. The spark appears to be good. You should now check the:

a. Overall engine performance (go to #56)
b. Cylinder compression (go to #70)
c. Engine timing (go to #29)
d. Contact points and condenser (go to #34)
e. Way the engine runs (go to #27)
f. Fuel pump volume capacity (go to #59)
g. Spark plugs (go to #31)

40. The choke operation appears to be satisfactory. Now you should:

a. Check the carburetor float setting (go to #2)
b. Replace the spark plugs (go to #55)
c. Perform a cylinder compression test (go to #19)
d. Tell Mr. Miller that you have fixed the car (go to #120)
e. Adjust the carburetor idle speed and mixture (go to #37)
f. Check the contact point dwell (go to #120)
g. Adjust the idle speed considerably higher (go to #43)

41. If a gasoline fire should start, you would need a fire extinguisher rated for:

a. Class A fires (go to #120)
b. Class B fires (go to #120)
c. Class C fires (go to #120)

42. After servicing the carburetor air cleaner, you should:

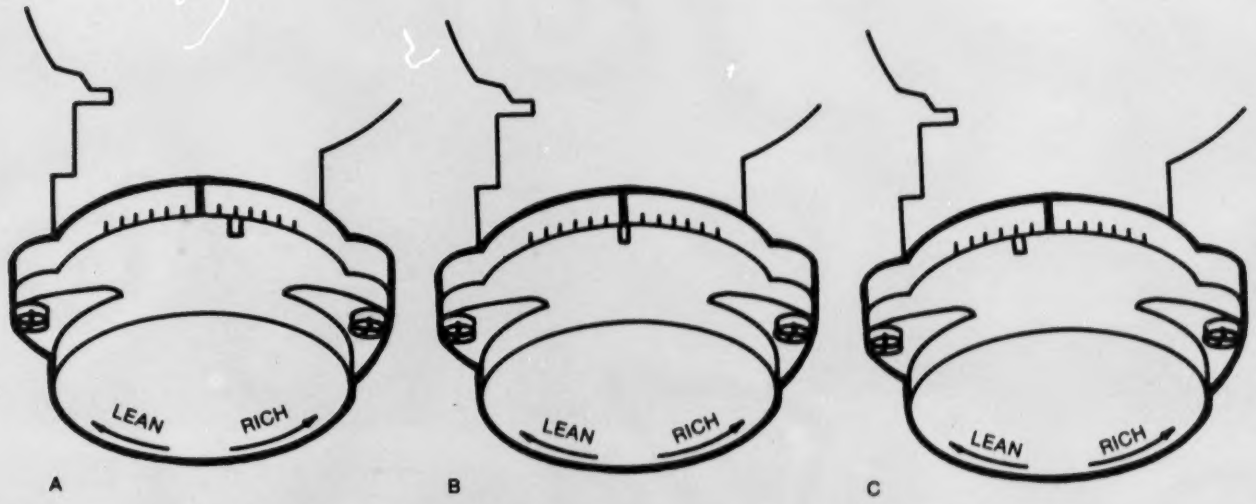
a. Perform a fuel pump volume test (go to #59)
b. Replace the spark plugs (go to #31)
c. Perform a cylinder compression test (go to #70)
d. Hook up an engine analyzer (go to #56)
e. Crank the engine to hear how it runs (go to #27)

43. The engine is now idling roughly at about 1,600 RPM. You should now:

a. Check the cylinder compression (go to #55)
b. Adjust the carburetor idle speed and mixture (go to #37)
c. Perform a spark intensity test at the coil (go to #19)
d. Check the contact point dwell (go to #83)

44. The specifications for the automatic choke require a setting of ***2 rich.*** Which of the following settings of the choke should you use?

a. A (go to #48)
b. B (go to #48)
c. C (go to #48)



A B C

45. After checking to see that the fuel pump operation is correct, you should check the:

a. Primary ignition system (go to #55)
b. Carburetor (go to #55)
c. Spark plugs (go to #55)
d. Manifold heat control valve (go to #55)

46. Before proceeding with the fuel pump volume test, you should also:

a. Check the carburetor inlet filter (go to #82)
b. Check the engine timing (go to #29)
c. Check the amount of fuel in the fuel tank (go to #110)
d. Disable the ignition (go to #118)

47. After replacing the fuel inlet filter cartridge, you should:

a. Adjust the carburetor idle mixture and speed (go to #62)
b. Replace the spark plugs (go to #31)
c. Crank the engine to hear how it runs (go to #111)
d. Perform a cylinder compression test (go to #70)
e. Tell Mr. Miller that you have fixed the car (go to #83)

48. After installing the carburetor, you should next:

a. Adjust the idle speed (go to #103)
b. Adjust the idle mixture (go to #103)
c. Check the engine timing (go to #94)
d. Adjust the contact point dwell (go to #55)

49. Results of the "wet" compression test are:

CYL. NO.	1	2	3	4	5	6	7	8
COMPRESSION	130	140	150	140	140	140	140	140

These results indicate that the:

a. Valves are worn or defective (go to #97)
b. Piston rings are worn or defective (go to #97)
c. Engine has a blown headgasket (go to #97)
d. Engine compression is okay (go to #113)

50. The engine compartment is dirty, and you cannot see any loose wires. All of the hoses and lines appear to be connected. You should now:

a. Replace the carburetor air cleaner (go to #76)
b. Perform a fuel pump volume test (go to #59)
c. Replace the ignition points and condenser (go to #34)
d. Hook up an engine analyzer (go to #56)
e. Crank the engine to hear how it runs (go to #27)
f. Perform a spark intensity test at the coil (go to #63)
g. Replace the spark plugs (go to #31)

51. Since the choke piston assembly is properly set, you should now:

a. Overhaul the carburetor (go to #108)
b. Set the idle speed considerably higher (go to #43)
c. Check the carburetor float setting (go to #2)
d. Check the contact point dwell (go to #120)

52. The engine timing is set to specifications. You should next:

a. Check the fuel pump volume (go to #59)
b. Check the fuel filter (go to #119)
c. Check the cylinder compression (go to #83)
d. Replace the spark plugs (go to #19)

53. After replacing the fuel inlet filter cartridge, you should:

a. Perform a cylinder compression test (go to #70)
b. Crank the engine to hear how it runs (go to #111)
c. Replace the spark plugs (go to #31)
d. Tell Mr. Miller that you have fixed the car (go to #120)

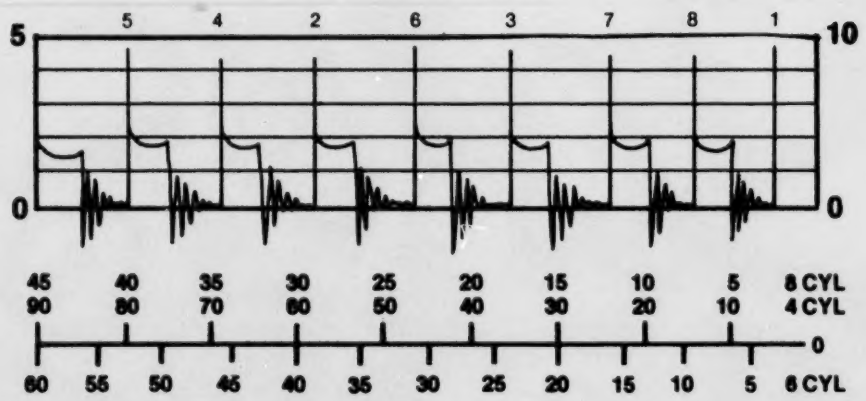
54. None of the fuel lines have any visible defects. You should now:

a. Replace the fuel pump (go to #55)
b. Perform a spark intensity test at the coil (go to #63)
c. Replace the ignition points and condenser (go to #34)
d. Hook up the engine analyzer (go to #56)
e. Overhaul the carburetor (go to #108)
f. Perform a cylinder compression test (go to #70)
g. Crank the engine to hear how it runs (go to #111)

55. What condition might be responsible for most or all of the symptoms described in Question 1?

a. The carburetor idle speed is set too high (go to #41)
b. The manifold heat control valve is faulty (go to #41)
c. The carburetor choke is frozen open (go to #41)
d. The fuel filter is clogged (go to #41)

56. This is the oscilloscope pattern you obtain:



Based on this oscilloscope pattern, you should:

a. Check a raster pattern (go to #22)
b. Check the engine timing (go to #29)
c. Crank the engine to hear how it runs (go to #92)
d. Perform a fuel pump volume test (go to #59)

57. The results of the fuel pump pressure test showed 6.2 psi at idle RPM. Specifications are 5.7-7.7 psi. You should now:

a. Replace the fuel pump (go to #19)
b. Replace the fuel filter (go to #82)
c. Perform a fuel pump vacuum test (go to #8)
d. Check the carburetor idle speed and mixture (go to #14)
e. Check the carburetor air cleaner (go to #6)
f. Hook up the engine analyzer (go to #102)

58. Once the carburetor has been removed from the engine, you should disassemble the:

a. Choke mechanism (go to #65)
b. Throttle body assembly (go to #65)
c. Float bowl assembly (go to #65)
d. Air horn assembly (go to #65)

59. Where would you disconnect the fuel line to attach the fuel pump volume hose?

a. At the inlet to the fuel pump (go to #64)
b. At the fuel pump outlet (go to #38)
c. At the carburetor inlet (go to #80)
d. At the fuel vapor separator (go to #36)

60. After replacing the distributor cap and rotor, you should:

a. Tell Mr. Miller that you have fixed the car (go to #120)
b. Road-test the vehicle (go to #120)
c. Recheck engine performance with the engine analyzer (go to #120)

61. Most of the spark plugs look like this:

This condition indicates:

a. An excessively rich air-fuel mixture (go to #98)
b. An improper heat range selection for the spark plugs (go to #26)
c. Oil contamination in the combustion chamber (go to #87)
d. Preignition (go to #15)

62. The technical service manual lists these headings under carburetor adjustments: hot (slow) idle RPM; dashpot adjustment; idle mixture; cold (fast) idle RPM.

You should first set the:

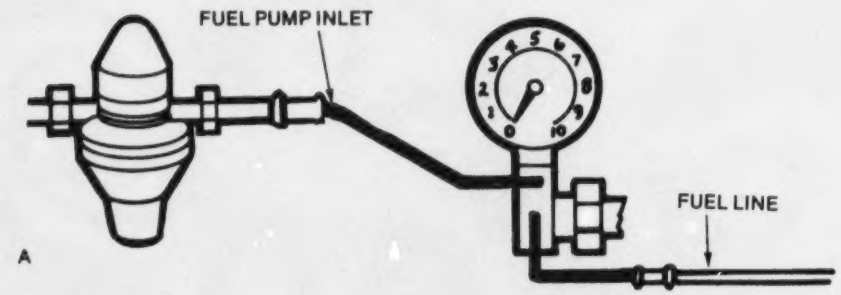
a. Cold (fast) idle RPM (go to #20)
b. Idle mixture (go to #20)
c. Dashpot adjustment (go to #20)
d. Hot (slow) idle RPM (go to #20)

63. To perform a spark intensity test at the coil, you should:

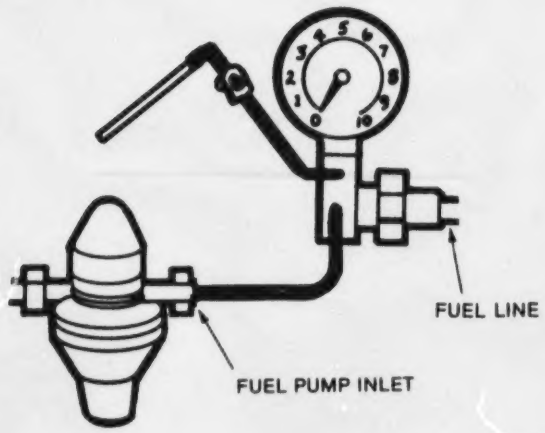
a. Disconnect the battery ground cable clamp (go to #71)
b. Remove the spark plugs (go to #71)
c. Hook up a remote starter switch (go to #71)
d. Install the carburetor air cleaner assembly (go to #71)

64. Which of the following hookups should you use for the fuel pump volume test?

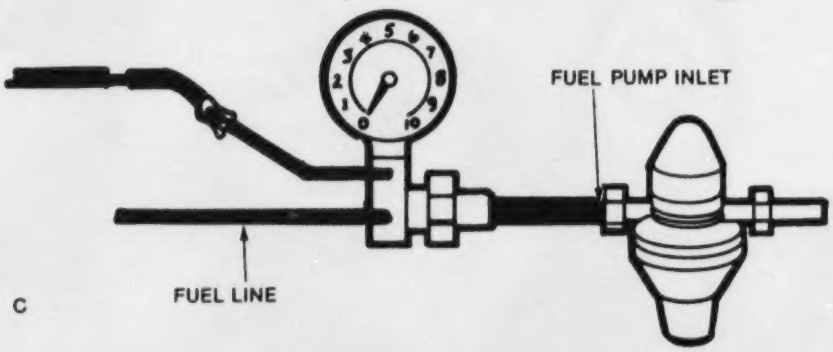
a. A (go to #45)
b. B (go to #9)
c. C (go to #36)



A



B



C

21

65. After cleaning the carburetor parts, you should:

a. Dry them with compressed air (go to #89)
b. Dry them with a shop rag or towel (go to #89)
c. Letting them air-dry (go to #89)

66. After installing the cartridge, you should:

a. Adjust the carburetor idle mixture and speed (go to #86)
b. Replace the spark plugs (go to #83)
c. Crank the engine to hear how it runs (go to #11)
d. Perform a cylinder compression test (go to #55)
e. Tell Mr. Miller that you have fixed the car (go to #120)

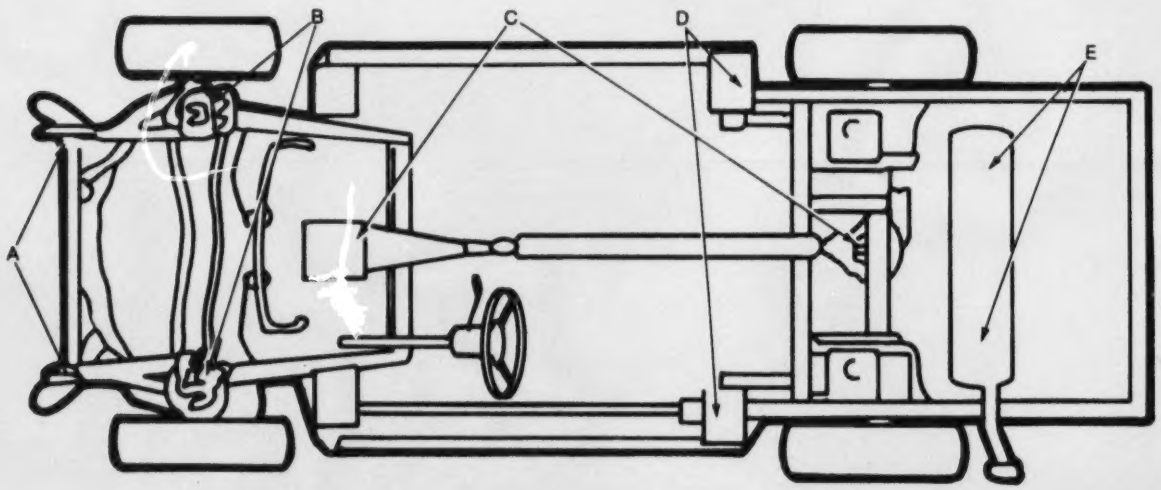
67. Once you have removed the spark plugs, you should:

a. Examine the spark plugs for wear and damage (go to #61)
b. Replace them with new spark plugs (go to #98)

68. Mr. Miller asks you whether you have road-tested the car. You should now:

a. Road-test the vehicle (go to #81)
b. Check the ignition timing (go to #94)
c. Hook up the ignition analyzer (go to #107)
d. Tell Mr. Miller that you have fixed the car (go to #120)

69. To test the entire fuel line, the vehicle must be raised. The shop only has a floor jack and jack stands. At what points should you place the jack stands to support the vehicle?



a. A points (go to #55)
b. B points (go to #17)
c. C points (go to #83)
d. D points (go to #17)
e. E points (go to #19)

70. To perform a cylinder compression test, you should:

a. Block the throttle valve shut (go to #84)
b. Install the carburetor air cleaner assembly (go to #83)
c. Remove all the spark plugs (go to #84)
d. Remove the battery ground cable clamp (go to #19)

71. The spark appears to be good. Next you should check the:

a. Overall engine performance (go to #56)
b. Engine timing (go to #29)
c. Contact points and condenser (go to #34)
d. Way the engine runs (go to #92)

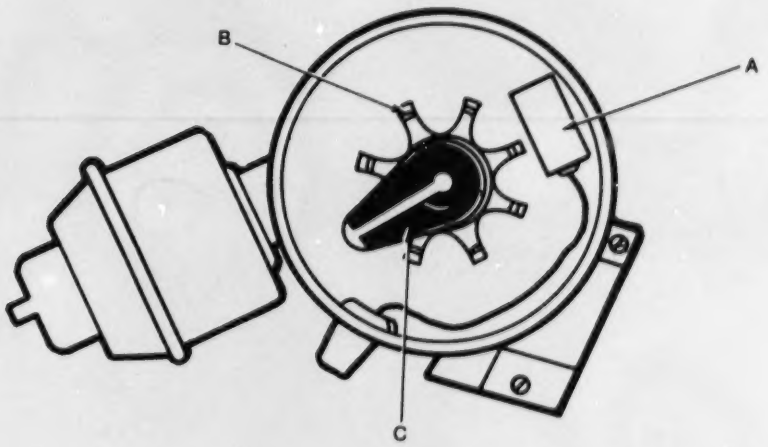
72. After adjusting the carburetor idle speed and mixture, you should:

a. Tell Mr. Miller that you have fixed the car (go to #120)
b. Test-drive the vehicle (go to #115)
c. Check the cylinder compression (go to #55)
d. Perform the fuel pump volume test (go to #19)
e. Replace the spark plugs (go to #83)

73. The coil has two primary terminals. The one marked *DEC* is connected to the:

a. Battery line (go to #100)
b. Distributor line (go to #100)
c. Electronic control module line (go to #100)

74. Here is what you see after you have removed the distributor cap:



You should now:

a. Replace Part A (go to #55)
b. Replace Part B (go to #19)
c. Replace Part C (go to #83)
d. Install the distributor cap and check something else (go to #7)
e. Adjust the gap between Parts A and B (go to #41)

23

75. To replace the fuel pump on this vehicle, you should first:

a. Disable the ignition (go to #55)
b. Raise the vehicle (go to #19)
c. Remove the carburetor air cleaner assembly (go to #83)
d. Remove the carburetor inlet filter (go to #55)

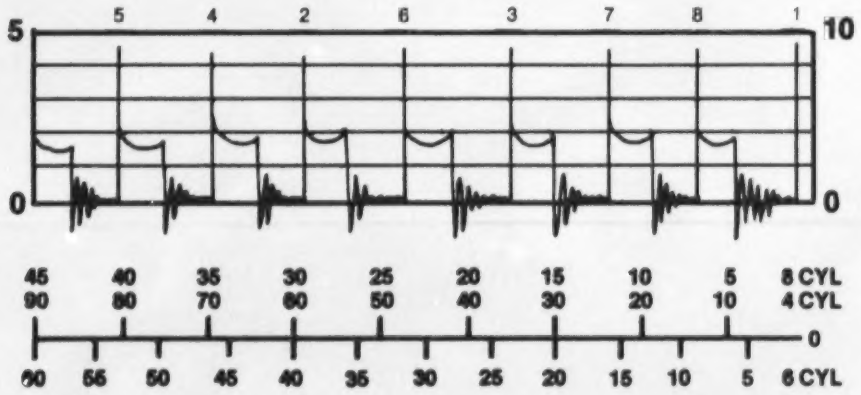
76. When servicing the carburetor air cleaner, you should:

a. Clean the filter element with compressed air (go to #42)
b. Inspect the crankcase ventilation filter (go to #42)
c. Wet the paper filter element again with oil (go to #55)
d. Torque the wing nut on the air cleaner assembly to specifications (go to #19)
e. Replace the carburetor air horn gasket (go to #42)

77. The specified resistance is 1.0-2.0 ohms. The measured coil resistance is 1 ohm. You should next:

a. Replace the coil (go to #100)
b. Check the coil secondary resistance (go to #5)
c. Replace the secondary wiring (go to #19)
d. Road-test the vehicle (go to #120)

78. The spark plug firing voltages look like this:



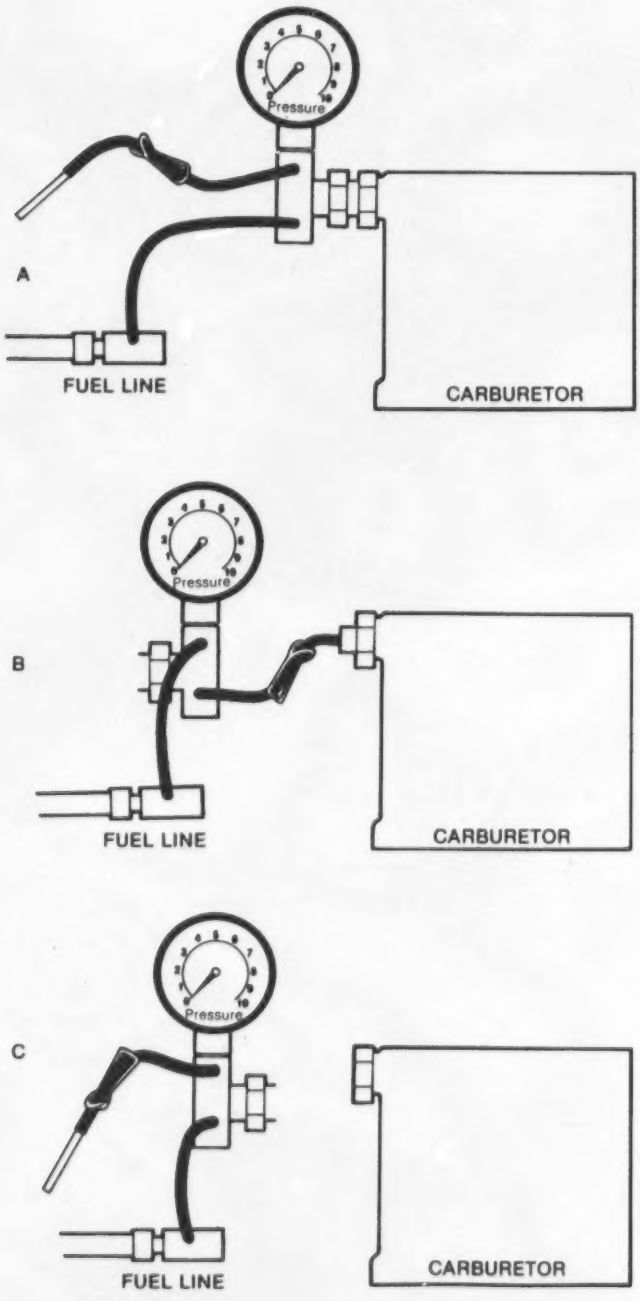
Based on this pattern, you should:

a. Use a raster pattern to check the dwell period (go to #99)
b. Check the distributor cap and rotor voltage leakage (go to #35)
c. Use a raster pattern to check the coil oscillations (go to #12)
d. Road-test the vehicle (go to #81)
e. Tell Mr. Miller that you have fixed the car (go to #68)
f. Replace all the secondary wiring (go to #55)

79. When adjusting the float mechanism, you should first set the:

a. Float drop (go to #25)
b. Float level (go to #25)

80. Which of these hookups should you use for the fuel pump volume test?



a. A (go to #18)
b. B (go to #45)
c. C (go to #9)

25

81. The vehicle runs smoothly on the road, accelerates well, and idles properly. You should next:

a. Tell Mr. Miller that you have fixed the car (go to #41)
b. Perform a fuel pump pressure test (go to #19)
c. Check the manifold heat control valve (go to #83)
d. Replace the carburetor air cleaner (go to #55)

82. The carburetor inlet filter for this particular engine is enclosed in a nonserviceable cartridge. You should now:

a. Clean the filter by soaking the cartridge in carburetor cleaning solvent (go to #66)
b. Replace the filter cartridge (go to #47)
c. Clean the filter by shooting some compressed air through the cartridge (go to #19)
d. Leave the fuel filter alone (go to #55)

83. What condition might be responsible for most or all of the symptoms described in Question 1?

a. The carburetor inlet fuel filter is in backwards (go to #41)
b. The carburetor choke is frozen open (go to #41)
c. The distributor vacuum advance is faulty (go to #41)
d. The carburetor is loosely connected to the manifold (go to #41)

84. Before cranking the engine for the first cylinder, you should ground the:

a. Coil (+) primary lead (go to #3)
b. Coil high-tension lead (go to #3)

85. You find the throttle valve nearly shut and the choke valve open. You should now:

a. Remove and clean the choke assembly (go to #28)
b. Check the contact point dwell (go to #120)
c. Overhaul the carburetor (go to #108)
d. Check the choke piston assembly to be sure it is set properly (go to #51)
e. Check the carburetor float setting (go to #2)

86. The engine will not start. What procedures should you follow to adjust the idle speed and mixture?

a. Adjust the idle mixture screws first (go to #55)
b. Adjust the idle speed screw first (go to #19)
c. Overhaul the carburetor and then adjust the idle speed and idle mixture (go to #83)

87. What other method could be used to detect oil contamination in the combustion chamber?

a. Checking firing voltages with an engine analyzer (go to #4)
b. Testing cylinder power balance (go to #4)
c. Testing cylinder compression (go to #4)
d. Checking contact point dwell (go to #41)
e. Checking secondary wire resistance (go to #19)

88. Before proceeding with the fuel pump volume test, you should:

a. Install the carburetor air cleaner assembly (go to #46)
b. Disable the ignition (go to #118)
c. Check the amount of fuel in the fuel tank (go to #110)
d. Check the engine timing (go to #29)

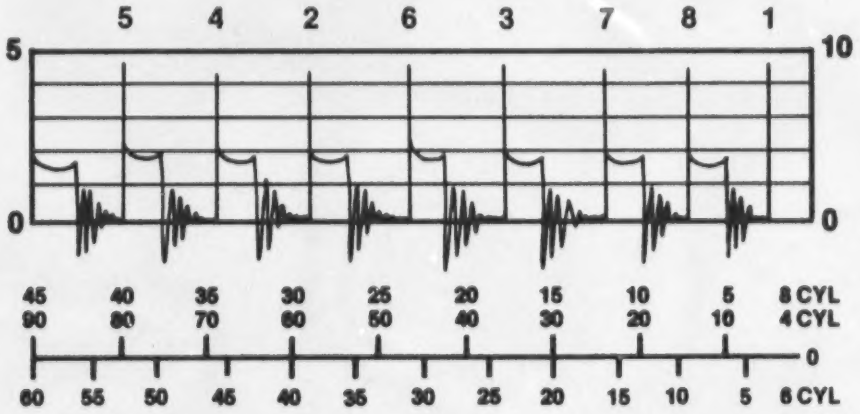
89. Which of the following parts would normally be replaced when overhauling a carburetor?

a. The vacuum-break diaphragm (go to #79)
b. The fast idle cam (go to #79)
c. The idle mixture screws (go to #79)
d. The carburetor mounting nuts (go to #79)
e. The carburetor inlet filter (go to #79)

90. If Mr. Miller asked you to verify your results, what would you check?

a. The cylinder power balance (go to #19)
b. The cylinder leakage (go to #19)
c. The ignition timing and contact point dwell (go to #19)
d. The condition of the spark plugs (go to #19)
e. The overall secondary firing patterns (go to #19)

91. This is the oscilloscope pattern from the engine:



Based on this pattern, you should:

a. Check the contact point dwell (go to #55)
b. Replace the distributor electronic control module (go to #19)
c. Check the engine timing (go to #52)
d. Check the cylinder compression (go to #19)
e. Check the fuel pump volume (go to #59)
f. Check the fuel filter (go to #119)

92. The engine starts and then stalls after a few moments. This happens several times. The engine runs when you hold the throttle down, but it stalls at idle. You should now:

a. Overhaul the carburetor (go to #108)
b. Check the choke mechanism (go to #114)
c. Adjust the carburetor idle speed and mixture (go to #103)
d. Check the condition of the contact points (go to #83)

93. To check the fuel line for leaks, you should:

a. Visually inspect the fuel line (go to #30)
b. Perform a fuel pump vacuum test (go to #8)
c. Hold a lighted match near all parts of the fuel line (go to #41)

94. The ignition timing is set according to manufacturer's specifications. You should now:

a. Road-test the vehicle (go to #81)
b. Tell Mr. Miller that you have fixed the car (go to #120)
c. Hook up an engine analyzer (go to #107)
d. Change the carburetor air cleaner (go to #19)

95. Once you have made the necessary adjustments and reassembled the choke mechanism, you should:

a. Overhaul the carburetor (go to #108)
b. Adjust the idle speed and mixture (go to #37)
c. Check the contact point dwell (go to #120)
d. Check the carburetor float setting (go to #2)
e. Check for proper choke operation (go to #40)

96. The engine starts and then stalls after a few moments. This happens several times. The engine runs when you hold the throttle down, but it stalls at idle. Now you should:

a. Remove the carburetor air cleaner assembly and check the carburetor choke (go to #114)
b. Adjust the idle speed considerably higher (go to #43)
c. Check the contact point dwell (go to #120)
d. Check the carburetor float setting (go to #2)
e. Overhaul the carburetor (go to #108)

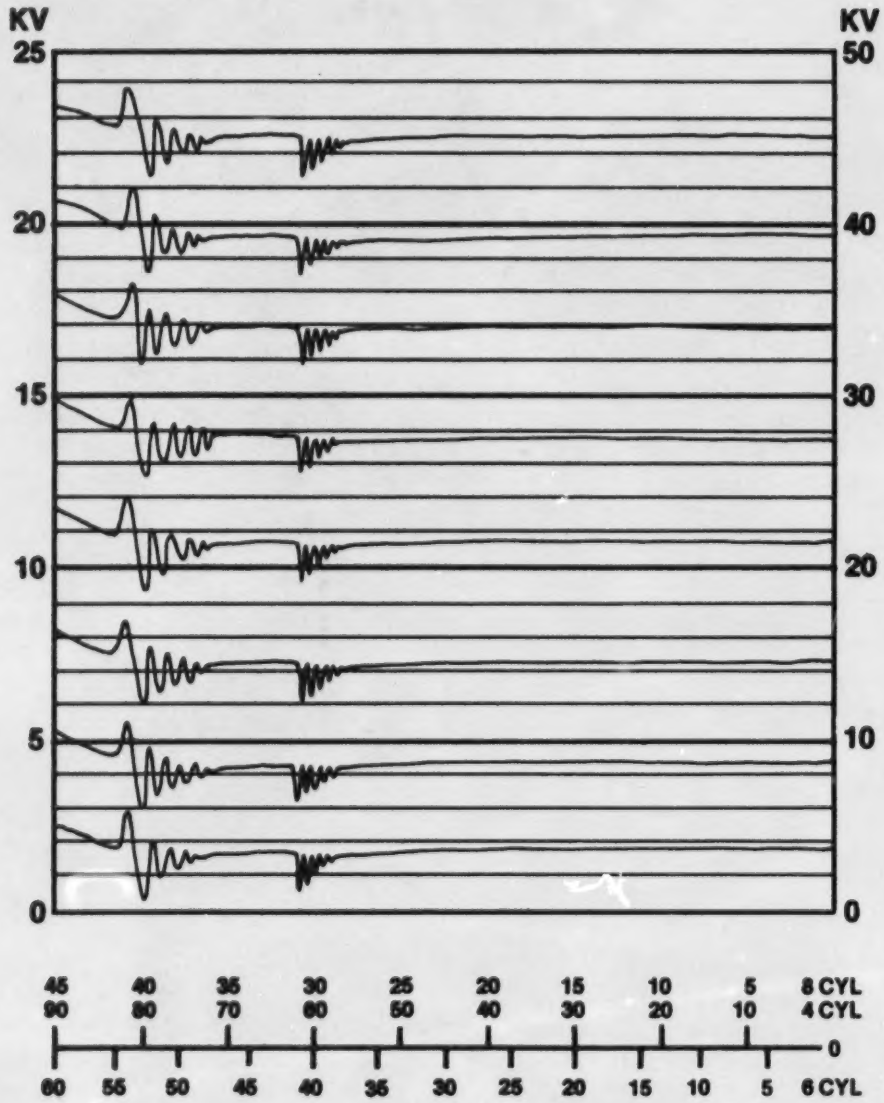
97. You tell Mr. Miller your diagnosis and he asks you how you figured it out. You tell him that:

a. The dry and wet compression test results were too low (go to #90)
b. The compression was lower for the dry test than for the wet test (go to #90)
c. The difference between the lowest and highest cylinders was 25 pounds (go to #90)
d. Too many adjacent cylinders varied (go to #90)
e. It was a lucky guess (go to #90)

98. After replacing the spark plugs, you should:

a. Perform a fuel pump volume test (go to #59)
b. Hook up an engine analyzer (go to #56)
c. Replace the ignition points and condenser (go to #41)
d. Perform a cylinder compression test (go to #70)
e. Crank the engine to hear how it runs (go to #92)

99. The secondary raster pattern looks like this:



The dwell period is:

a. 31 degrees (go to #21)
b. 41 degrees (go to #21)
c. 62 degrees (go to #21)
d. There is no dwell period (go to #21)

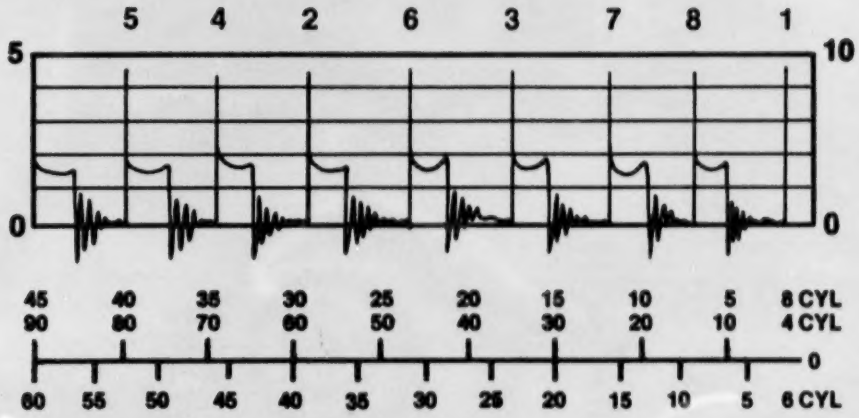
100. After replacing the coil, you should:

a. Tell Mr. Miller that you have fixed the car (go to #120)
b. Road-test the vehicle (go to #120)
c. Recheck the engine performance, using the engine analyzer (go to #120)

101. The float level adjustment is okay. Next you should:

a. Check the idle mixture and speed (go to #37)
b. Overhaul the carburetor (go to #108)
c. Tell Mr. Miller you have fixed the car (go to #120)
d. Replace the float mechanism (go to #19)

102. Here is the oscilloscope pattern you have obtained:



Based on this oscilloscope pattern, you should:

a. Check the raster pattern (go to #117)
b. Check the engine timing (go to #29)
c. Crank the engine to hear how it runs (go to #92)

103. After the carburetor adjustments have been made, you should:

a. Road-test the vehicle (go to #81)
b. Tell Mr. Miller that you have fixed the car (go to #68)
c. Check the ignition timing (go to #94)
d. Hook up an engine analyzer (go to #107)

104. The recommended method for drying the choke parts after cleaning them is to:

a. Use disposable towels (go to #95)
b. Use compressed air (go to #11)
c. Allow them to air-dry (go to #11)

105. The engine idles and accelerates smoothly, so you should:

a. Test-drive the vehicle (go to #55)
b. Hook up an engine analyzer (go to #19)
c. Tell Mr. Miller that you have fixed the car (go to #83)

106. The only fuel filter in this vehicle is located in the carburetor inlet. To remove it, you would use:

a. A box-end wrench (go to #82)
b. An allen wrench (go to #55)
c. A flare-nut wrench (go to #82)

107. After attaching the leads to the engine analyzer, you should:

a. Use a display pattern to check the secondary firing voltages (go to #78)
b. Use a raster pattern to check the dwell period (go to #99)
c. Use a raster pattern to check coil oscillations (go to #12)
d. Check the distributor cap and rotor air gap (go to #35)

108. Before removing the carburetor from the engine for overhaul, you must first:

a. Remove the air horn assembly (go to #55)
b. Drain the float bowl (go to #19)
c. Disconnect the accelerator and choke linkage (go to #58)
d. Stuff shop rags into the carburetor throttle body (go to #58)
e. Disconnect the fuel hoses and lines (go to #58)

109. To check the float level, you should:

a. Remove the air horn assembly (go to #23)
b. Remove the throttle body assembly (go to #23)
c. Remove the main body and air horn assembly (go to #23)
d. Remove the entire carburetor (go to #55)

110. The fuel pump volume test resulted in one pint and four ounces of fuel pumped in 20 seconds. You would now:

a. Perform a fuel pump pressure test (go to #24)
b. Check for leaks in the fuel line (go to #93)
c. Replace the fuel pump (go to #75)
d. Replace the fuel filter (go to #106)
e. Adjust the carburetor idle speed and mixture to specifications (go to #14)

111. The engine starts and then stalls after a few moments. This happens several times. The engine runs when you hold the throttle down, but it stalls at idle. You should now:

a. Replace the spark plugs (go to #31)
b. Check the contact point condition (go to #34)
c. Overhaul the carburetor (go to #108)
d. Adjust the carburetor idle speed and mixture (go to #103)
e. Remove the carburetor air cleaner assembly and check the choke (go to #114)

112. After replacing the fuel inlet filter cartridge, you should next:

a. Tell Mr. Miller that you have fixed the car (go to #83)
b. Crank the engine to hear how it runs (go to #105)
c. Replace the spark plugs (go to #19)
d. Overhaul the carburetor (go to #55)

113. Once you have determined that the engine is okay, what should you check next?

a. The spark intensity at the coil (go to #83)
b. The spark plugs (go to #105)
c. The overall engine performance (go to #19)
d. The ignition points and condenser (go to #55)

114. To inspect the choke, you should check to be sure that the:

a. Throttle valve is fully open (go to #85)
b. Choke valve is shut (go to #85)
c. Choke valve is open (go to #85)
d. Choke butterfly moves freely (go to #116)
e. Choke piston assembly is properly set (go to #51)

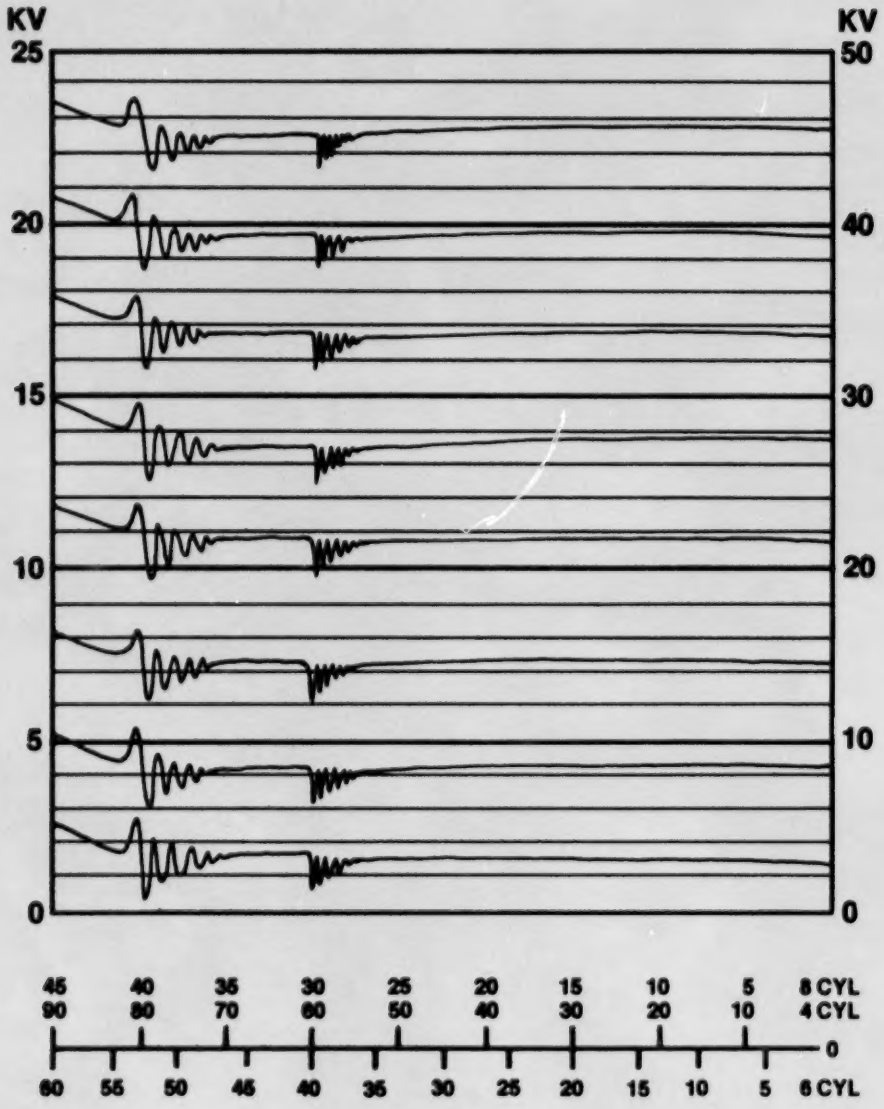
115. The car stumbles when you try to accelerate, but it idles well. You should next check the:

a. Fuel pump volume (go to #59)
b. Ignition performance (go to #91)
c. Fuel filter (go to #119)
d. Engine timing (go to #52)
e. Cylinder compression (go to #19)

116. The choke butterfly moves freely. You should next:

a. Overhaul the carburetor (go to #108)
b. Check the contact point dwell (go to #120)
c. Check the carburetor float setting (go to #2)
d. Check the choke piston assembly to be sure it is set properly (go to #51)

117. This is the oscilloscope pattern you obtain:



Based on this pattern, you should:

a. Replace the spark plugs (go to #55)
b. Crank the engine to hear how it runs (go to #92)
c. Check the engine timing (go to #29)

118. Before proceeding with the fuel pump volume test, you should also check the:

a. Carburetor inlet filter (go to #82)
b. Engine timing (go to #29)
c. Amount of fuel in the fuel tank (go to #110)

119. The only fuel filter on the vehicle is a nonserviceable carburetor fuel inlet filter cartridge. You should now:

a. Clean the filter by soaking the cartridge in carburetor cleaning solvent (go to #55)
b. Replace the filter cartridge (go to #112)
c. Leave the fuel filter as it is (go to #19)

120. STOP. You have completed this activity. Give this test and your answer sheet to your instructor.